

REMARKS

After the foregoing Amendment, Claims 1-13 are currently pending in this application. Claim 1 has been amended to more distinctly claim the subject matter which the Applicants regard as the invention. Applicants submit that no new matter has been introduced into the application by this amendment.

Claim Rejections - 35 USC §103

1. Claims 1-5 and 8-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Application No. 2002/0105913 to Miya, hereinafter referred to as "Miya", in view of U.S. Application No. 2004/0203786 to Ishiguro, hereinafter referred to as "Ishiguro".

The present invention is a method and apparatus for integrating resource allocation between Time Division Duplex (TDD) and Frequency Division Duplex (FDD) in wireless communication systems.

Regarding claim 1, claim 1 as amended discloses a method for integrating resources between TDD and FDD wherein radio access bearer (RAB) requests, i.e., call-setup requests, are received in a radio network controller (RNC). These requests are processed in the RNC for estimating a degree of symmetry in uplink and downlink connections required to support communications associated with the RAB requests. Based on the estimated symmetry, the RNC selects to allocate FDD or TDD resources to service the requested connections.

Conversely, Miya discloses a method for a terminal apparatus to connect to a base station wherein the terminal apparatus first monitors signals transmitted by a plurality of base stations to determine the types of services provided by the base stations. The terminal apparatus then measures a quality of service provided by the base station (see page 2, paragraph [0024] of Miya), including congestion levels (see page 3, paragraph [0039] of Miya). Next, the terminal apparatus determines which base station, based on its desired services and quality measurements, it prefers to connect to. Once this decision is made, the terminal apparatus transmits quality measurements and other control information as a control signal to the selected base station (see page 2, paragraphs [0031] and [0040]). This control signal is received at the base station and used by the base station to determine whether it will connect to the terminal apparatus and if so, which type of system is best suited to service the terminal apparatus (see pages 2-3, paragraphs [0032]-[0034] and paragraphs [0041]-[0042] of Miya).

Miya fails to disclose sending connection requests directly to an RNC and determining which type of system is best suited to service the request in the RNC. Instead, Miya requires a terminal apparatus to monitor system conditions and decide on its own which base station is preferred (see page 3, paragraph [0039]). Miya then requires a base station to decide whether to connect to the terminal apparatus and with which type of system resources (see page 3, paragraph [0042]).

Additionally, Miya fails to disclose estimating a degree of symmetry in uplink (UL) and downlink (DL) connections and subsequently, selecting a TDD or FDD connection based on the estimated UL-DL degree of symmetry.

Ishiguro discloses a control device that enables a mobile terminal to switch communications from a first mobile communication system to a second mobile communication system based on a position measurement of the mobile terminal (see Abstract of Ishiguro). Like Miya, Ishiguro fails to disclose estimating a UL-DL degree of symmetry and subsequently, selecting a TDD or FDD connection based on the estimated degree of symmetry. Instead, Ishiguro merely discloses the well known fact that if a terminal can be switched from one mode to another when necessary, superior system efficiency may be realized (see page 1, paragraph [0010] of Ishiguro).

Accordingly, since the Miya-Ishiguro combination fails to disclose all of the features of claim 1, it is respectfully submitted that claim 1 is not unpatentable over Miya in view of Ishiguro.

Claims 2-5 are dependent upon claim 1, which the Applicants submit are allowable over the cited prior art of record for the same reasons provided above with respect to claim 1.

With regard to claim 8, claim 8 discloses a system for integrating resources between TDD and FDD in wireless communication systems. The system comprises

a core network (CN), a TDD-RNC, a FDD-RNC and a TDD-FDD selector configured to receiving RAB requests, estimate a symmetry status of UL and DL connections required to support RAB assignment requests, and select a TDD or FDD connection based on the estimated symmetry status.

Conversely, the system disclosed by Miya fails to disclose both a TDD-RNC and a FDD-RNC. Further, Miya fails to disclose a TDD-FDD selector configured to estimate a symmetry status of UL and DL connections, and to select a TDD or FDD connection based on the estimated symmetry status. Like Miya, Ishiguro also fails to disclose a device configured to estimate a symmetry status of UL and DL connections and subsequently make a decision based on the estimate. Accordingly, since the combination of Miya and Ishiguro fails to disclose all of the features of claim 8, it is respectfully submitted that claim 8 is not unpatentable over Miya in view of Ishiguro.

Claims 9-11 are dependent upon claim 8, which the Applicants submit are allowable for the same reasons provided above with respect to claim 8.

Based on the arguments presented above, withdrawal of the 35 U.S.C. §103(a) rejection of claims 1-5 and 8-11 is respectfully requested.

2. Claims 6-7 and 12-13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Miya-Ishiguro as applied to claims 5 or 8, and

further in view of U.S. Application No. 2002/00496062 to Petersen, hereinafter referred to as "Petersen".

Regarding claims 6 and 7, claims 6 and 7 disclose a method wherein a FDD-RNC is directly connected to a core network and a TDD-RNC is indirectly connected to the core network through the FDD-RNC. Conversely, Petersen discloses a system with one or more RNCs, each directly connected to a core network (see Figure 1 of Petersen). Accordingly, since Petersen fails to disclose a TDD-RNC indirectly connected to a core network, and since the combination of Miya-Ishiguro also fails to disclose this indirect connection, it is respectfully submitted that a Miya-Ishiguro-Petersen combination fails to disclose the features of claims 6 and 7.

Claims 12 and 13 disclose a system wherein an FDD-RNC includes a TDD serving network controller. Conversely, Petersen discloses a system with one or more RNCs, each directly connected to a core network (see Figure 1 of Petersen). Petersen does not disclose an FDD-RNC that includes a TDD serving network controller, wherein only the FDD-RNC is connected to the FDD RNC via an Iu interface. Accordingly, since Petersen fails to disclose an FDD-RNC of claims 12 and 13, and since the combination of Miya-Ishiguro also fails to disclose these features, it is respectfully submitted that a Miya-Ishiguro-Petersen combination fails to disclose the features of claims 12 and 13.

Applicant: Desgagne et al.
Application No.: 10/828,665

Based on the arguments presented above, withdrawal of the 35 U.S.C. 103(a) rejection of claims 6, 7, 12, and 13 is respectfully requested.

Conclusion

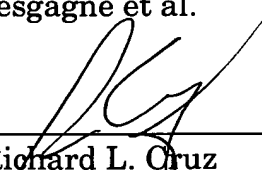
If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing amendment and remarks, Applicants respectfully submit that the present application, including claims 1-13, is in condition for allowance and a notice to that effect is respectfully requested.

Respectfully submitted,

Desgagne et al.

By


Richard L. Cruz
Registration No. 52,783

Volpe and Koenig, P.C.
United Plaza, Suite 1600
30 South 17th Street
Philadelphia, PA 19103
Telephone: (215) 568-6400
Facsimile: (215) 568-6499

RLC/slp